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Stress and Rhythm in the Educated Nigerian Accent of English

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Abstract
This paper examines stress in the Educated Nigerian Accent of English (ENAE) with the aim of analyzing stress and rhythmic patterns of Nigerian English. Nigerian stress and rhythmic patterns are significantly different from the British English stress and rhythmic patterns; consequently, the Educated Nigerian English (ENE) feature more stressed syllables than the native speakers' varieties. The excessive stressed of syllables causes a contiguous "Ss" in the rhythmic flow of ENE and this brings about a "jerky rhythm" which distorts communication. To ascertain this claim, twenty Nigerian speakers who are educated in the English Language were selected by a Stratified Random Sampling technique from two Federal Universities in Nigeria. This category of speakers belongs to the educated class or standard variety. Their performances were compared to that of a Briton who was the control in the study. In analyzing their performances, the Optimality Theory analysis was used. The analyses revealed that the Educated Nigerian English speakers feature more stressed syllables in their realizations. They spend more time in pronouncing stressed syllables and occasionally lesser time in pronouncing stressed syllables and their overall tempo was faster. We conclude that the stress pattern of ENE speakers are significantly different from the native speaker's variety represented by the control.
Keywords: Accent, Educated Nigerian English, Rhythm, Stress.

1.Introduction

Over the years, many linguists have observed that the different kinds of English spoken in Nigeria as a multilingual country has divided Nigerian English into sub-varieties or accents and that the indigenous languages of Nigerian speakers influence their accent in English (Akere 1982, Awonusi, 1986, Okoro, 2004). It is a linguistic reality that Nigerian English exists as a legitimate variety peculiar to Nigerian speakers of English against the background of other varieties of the language, such as British English. According to Adetugbo (1979), majority of Nigerian English speakers first acquired the written form which has contributed to the inability of some to have a good mastery of the spoken form. Therefore, to gain mastery of a language is not limited to knowing the grammatical rules but also gaining knowledge of the phonetics and phonological system is very crucial to that achievement.

Speech is fundamental to any natural language. According to Eka (1996), 'phonetic features like tones, intonations, accentuation-stress…and phonological phenomena which extends over longer utterances like phrases and sentences are regarded respectively as properties of the syllables, words, phrases and sentences…' (p.140). Many who can completely write English can hardly make a corresponding performance in the spoken language to be understood and accepted by educated non-natives and native speakers of English despite the primacy of speech. The challenges that Nigerian speakers of English face especially in the aspects of supra-segmental features pose a threat to the intelligibility of Nigerian English, especially in the areas of stress and rhythm. That is the reason Clark and Yallop (1990) observe that "features of spoken language, which are not identified as discrete segment, are …non-segmental features or supra-segmental" (p.276). Udofot (2007) findings concerning the spoken Nigerian English is that the duration of unstressed syllable is longer than that of a native speaker which results in a tendency to have more or less even durations. This tendency, according to the source, is more pronounced as one descends the ladder of quality from the sophisticated (variety three) through the standard (variety two) to the non-standard (variety one) (p.21).

This paper examines how English is pronounced in the accent chosen as the educated or accepted variety by all Nigerians. The speeches or utterances and words of twenty educated Nigerian English speakers who are educated in the language were recorded, analyzed and compared with that of the control. We take accent in this paper either in reading or speaking as the stress or pressure of the voice upon a syllable of a word.

Gimson (1980) sees stress as one of the factors of prominence. According to the source, a sound or syllable which is stressed is one upon which there is expended, in the articulation, relatively great breath effort and muscular energy. The greater energy which a speaker concentrates on a particular syllable may be manifested for a listener as greater loudness. A speaker may feel some general degrees of articulatory energy in producing a polysyllabic word, for example in the word "examination", the English speaker will normally distinguish readily only stressed and unstressed (strong and weak) syllables, to which will correspond the listener's impression of loud and weak syllables (p.222). Hence, stress is seen as loudness for the listener. Jones (2004:245) clearly describes stress as "the degree of force with which a sound or syllable is uttered by a speaker". The syllables are units into which a word is divided with a vowel sound and usually one or more consonants. For instance, "tea" and "bank" have one syllable each, "doctor", has two syllables and "calendar" has three syllables. Ward (1972)

considers stress as a factor which can combine with either the length, pitch or inherent sonority of sounds to bring about prominence.

2.Stress and Rhythm

English sentences according to Ufot (2009) are normally spoken to a stress timed rhythm in which one stressed syllables and words are given prominence in speech. Consequently, some sentences could have either the iambic meter rule with its consistent fall and rise or a continuous trochaic rise and fall. As mentioned above, English is usually classified as stressed-timed while non stressed-timed languages are mora-timed or syllable-timed.

Abercrombie (1967) indicates that chest pulses which are a syllable-producing process supply the periodic recurrence of movement in the syllable-timed rhythm thereby making the syllable recur at equal intervals of time. On the other hand, the stress-producing process supplies the periodic reoccurrence of the movement in the stress-timed rhythm, thereby making the stressed syllables isochronous. As such, while every syllable is produced at equal intervals in the syllable-timed rhythm the stress-timed has equal interval from one stressed syllable to another, no matter the number of syllables that are unstressed between them. Since Nigerian languages are syllable-timed, Adetugbo, (1979) describes the rhythm of Nigerian English as syllable-timed because of such influence.

Eka (1993) differs from syllable –timed notion by describing the rhythm of the Nigerian languages as "inelastic-timed" because of the tendency to have more prominent syllables than the native speaker but Udofot, (2011) insists that standard Nigerian English is not stressed-timed, but that it rather "has more full vowels than reduced vowels (p.64). The implication is that standard Nigerian spoken English is neither stress-timed nor syllables-timed but rather it is more or less tone-timed.

3. Theoretical Framework

3. 1 Metrical Theory

The theoretical framework employed in this study is the metrical theory – Metrical phonology is a theory of word stress or linguistic prominence which implies that the prominence of a unit is defined relative to other units in the same phrase. This is a theory originally based on the doctoral research of Liberman (1975), which later became popularized in Liberman and Prince (1977). Liberman (1975:1) defined metrical phonology as a "theory of stress or linguistic prominence". In explicating this theory, Liberman gave an example to illustrate that, in the pronunciation of the phrase, "doctor use penicillin" (if said unexpected), the syllable "-ci-″ becomes the most stressed in the phrase, but the syllable "-doc-″ is more stressed than the syllable "–tor-″.

Elaborating on this theory, Liberman and Prince (1977) explains that "Metrical Phonology holds that stress is a separate from pitch accent their intonation, including effects on their amplitude. The perceived stress of a syllable results from the phrase it appears" (p.11).

Equally, Hayes (1995:229) explains that, "Metrical theory in phonology is concerned with phonological hierarchies, that is the oragnisation of segments into syllable, syllables into text, and so on, into higher level structure". This implies that it is concerned with hierarchical relations of segments to each other and not phonetic properties of segments.

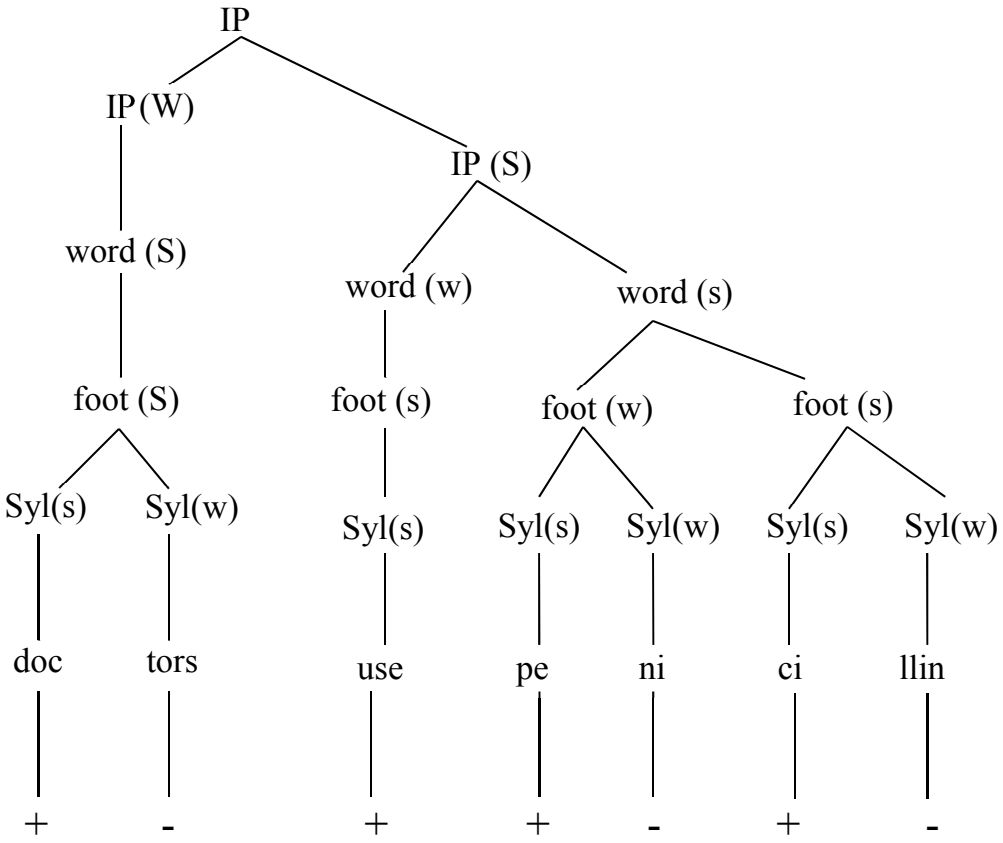
Metrical phonology offers a number of merits over a system representing stress as a feature that applies to individual segments or syllables, without reference to the other syllable in a phrase. This study gains from the metrical theory because it maintains that metrical patterns are rooted, oriented trees with, at most.

The metrical theory has the following assumptions: stress is represented in the form of metrical patterns and these metrical patterns are trees with node labels S (Strong) and W (Weak) and these trees should be "oriented" or "rooted". By implication any such tree is a constituent at the higher level. Metrical phonology maintained that stress is different from pitch accent and has phonetic effect on syllable, that are realized beyond their intonation, including effect on their duration and amplitude consequently, the perceived stress of a syllable proceeds from its position in the metrical tree and metrical grid it features.

3.2 Metrical Trees

In metrical phonology, linguistic prominence is partially determined by the relations between nodes in a branching tree, in which one node is strong (S) and the other node is Weak (W). A strong node is stronger than the Weak sister node. The most prominent syllable in a phrase is the one that does not have any weak node above it. This syllable is referred to as the Designated Terminal Element (DTE).

Figure 1: The Metrical Tree



The above metrical structure represented the sentence "Doctors use Penicillin".

4 Methodology

We selected twenty (20) Nigerian English speakers from two Federal Universities in Nigeria. These two Federal Universities, we hope, capture the majority of the ethnic groups or states in Nigeria. Students from the two universities were selected by stratified random sampling technique and our yardstick for stratification was education in the English language. In our analyses, we used seven (7) BA final year English students for category A, seven (7) Master of Arts (MA) final year English students for category B and six (6) Doctor of philosophy (Ph.D) final year students for category C which formed the educated class or the standard. The two utterances and words we used we named utterance 1 (U1) and utterance 2 (U2), word 1 (W1) and word 2 (W2) for the acoustic analysis and ten words for the perceptual and statistical analyses. We carried out the analysis using three different approaches: perceptual, statistical and acoustic. The ten (20) respondents pronounced ten words in isolation and two utterances. Their performance, were recorded, analyzed and compared to that of the control.

Statistically, details of the differences between the performance of the experimental group and the control, variations within and across the three categories A, B, C were calculated using one-way Analysis of variance (ANOVA), Wilcoxon Matched Pairs Signed Ranks Test and Turky Kramma Post Hoc Test to compare means among the three groups and between the three groups and the control. The Value of $p<0.05$ was considered significant. Simple percentage was also used in the analysis. The durations or overall tempo of the stressed and unstressed syllables, amplitude (intensity) by both the experimental group and the control were analyzed and compared. Our model of representation was the Metrical Theory. The stress pattern of each of the representative groups were also analyzed and compared to the control's output (performance).

Table 1: Ethnic/Geo-Political Groupings of Subjects

Respondents	Sex	Agee	State	Ethnicity	Geo-Political Zone	Degree	Departments
R 1	M	28	Bayelsa	Edo	South-South	BA	English Language
R 2	F	25	Edo	Edo	South-South	BA	English Language
R 3	F	26	Abia	Igbo	South-East	BA	English Language
R 4	M	36	Benue	Hausa	North-Central	MA	English Language
R 5	F	33	Rivers	Ogoni	South-East	MA	English Language
R 6	M		Akwa Ibom	Ibibio/Efik	South-South	MA	English Language
R 7	M		Sokoto	Hausa	North-North	PhD	English Language
R 8	F		Ogun	Yoruba	South-West	PhD	English Language
R 9	F	42	Cross Rivers	Efik	South-South	PhD	English Language
R 10	M	58	Ekiti	Yoruba	South-West	PhD	English Language
Control	M	48	Britain	Britain	Britain		

Key R = Respondents
* = 5 different geo-political zones in Nigeria

5.0 Presentation of Data

5.1 Perceptual Analysis

Generally, it was observed that the stress patterns of our subjects in words and utterances were different from the control's output in a way that certain syllables were stressed in place where the control did not. Our respondents tended to stress virtually every syllable for instance in words like "unpleasant "and "insolent ", the majority of our subjects stressed the three (3) syllables while the control stressed only one. Some respondents stressed the schwa sound /ə / in the word "again" as /agein/ or /egein/ or / baut/ whereas the control did not. In the control's output, there were more unstressed syllables than stressed syllables and more stressed syllables than unstressed syllables in the respondents' performances in categories A, B, C. We also noticed that our respondents hurried over the pronunciations while the control was more relaxed.

Table 2: Words in Isolation

S/N	Word	Transcription
1.	Unpleasant	/ʌnpleznt/
2.	Divine	/di'vain/
3.	Again	/ ə'gent/
4.	Magnet	/'mægnit/
5.	Correct	/kə'rekt/
6.	Disaster	/di'za:stə/
7.	Insolent	/'insəlent/
8.	Potato	/pə'teitəʊ/
9.	Resurrect	/rezə'rekt/
10.	Product	/'prɒdʌkt/

Table 3: Summary of Deviations in the Performance of Category A (BA) subjects: (Test Item 2-words in Isolation).

Subjects	Observed No. of stressed syllables (0)	Expected No. of stressed syllables (E)	Difference (O-E)	Percentage Deviation (%)	Rank of Differences
R 1	13	10	3	30	11
R 2	11	10	1	10	1.5
R 3	12	10	2	20	5.5
R 4	10	10	0	0	-
R 5	13	10	3	30	11
R 6	10	10	0	0	-
R 7	13	10	3	30	11
R 8	12	10	2	20	5.5
R 9	10	10	0	0	-
R 10	12	10	2	20	5.5
R11	13	10	3	30	11
R12	12	10	2	20	5.5
R13	10	10	0	0	-
R14	11	10	1	10	1.5
R15	10	10	0	0	-
R16	15	10	5	50	14.5
R17	13	10	3	30	11
R18	15	10	5	50	14.5
R19	12	10	2	20	5.5
R20	12	10	2	20	5.5
RA(Control)	10	10	0	0	-
Total	**239**	**200**	**39**	**-**	**120**

Table 3b: Wilcoxon Matched Pairs Signed Ranks Test

	N	Mean Rank	Sum of Ranks	Asymp. Sig. C2 – tailed P = value
Observed No. of stressed syllables (0) Negative Rank	0	0.00	0.00	0.000*
Expected No. of stressed syllables (E) Positive Ranks	15	8.00	120.00	P<0.05
Ties	5	-	-	-
Total	**20**	**-**	**-**	**-**

5.3 Explanation of Results

The result presented in Table 3 reveals that the modal deviation with a total of six (6) respondents out of the 20 respondents in the three categories A,B,C, having the level (20%) of deviation from the control's stressed syllables in their performances. The highest deviation from the standard expected stressed syllables was obtained from respondent R16 and R18 with as high as 50% deviation respectively. Table 3a presents the result of Wilcoxon Matched Pairs Signed Ranks Test of Significance for the deviation in the performances of categories A, B, C respondents. With a p-value of 0.000 obtained, it can be seen that at a = 0.05 level of significance, there was a significant ($p<0.05$) difference between the observed number of stressed syllables (the experimental group) and the expected number of stressed syllables (control). The respondents representing categories A, B, C recorded a higher value (380) of deviation. This shows the tendency to stress more syllables in words. The categories ABC had additional stressed syllable (a total number of syllables) compared to the controls (100 syllables).

Table 4a: Summary of Deviation in the Performance of Category B (MA) Subjects: Test Item 2 –Words in Isolation 9 (see table 1)

Respondents	Observed no. of Stressed Syllables	Expected no. of Stressed Syllables	Difference	Percentage Deviation	Rank of Difference
R1	11	10	1	10	2.5
R2	13	10	3	30	12
R3	12	10	4	20	7.5
R4	12	10	2	20	7.5
R5	10	10	0	0	-
R6	11	10	1	10	2.5
R7	11	10	1	10	2.5
R8	10	10	0	0	-
R9	10	10	0	0	-
R10	13	10	3	30	11
R11	12	10	2	20	7.5
R12	15	10	5	50	15.5
R13	12	10	2	20	7.5
R14	13	10	3	30	11
R15	15	10	5	50	15.5
R16	12	10	2	20	7.5
R17	10	10	0	0	-
R18	14	10	4	40	13.5
R19	11	10	1	10	2.5
R20	15	10	5	50	15.5
RA(Control)	10	10	0	0	-
Total	**241**	**200**	**41**	**400**	**136**

Table 4b: Wilcoxon Matched Pairs Signed Ranks Test

	N	Mean Rank	Sum of Ranks	Asymp. Sig. C2 – tailed P = value
Observed No. of Stressed syllables (0) Negative Rank	0	0.00	0.00	0.000*
Expected No. of Stressed syllables (E) Positive Ranks	16	8.50	136	P<0.05
Ties	4	-	-	-
Total	20	-		

P<0.05 relative to control

5.4 Explanation of Results

The result presented in Table 4 reveals a bimodal deviation. Twenty percent (20%) deviations had the highest frequency of occurrence with a total of five (5) respondents each, out of the twenty respondents studied in Category B, having these levels (20% and 30%) of deviations from the control's stressed syllables in the performance. Respondents (R11, R15 and R16) had the highest (50%) deviation from the control's stressed syllables in their performances followed by respondents R1, R9 and R19 (30%). Four respondents R4, R8, R13 and R17, showed no deviation from the control's stressed syllables in the performance.

Table 4a presents the result of Wilcoxon matched Pairs Signed Test of significance for the deviations in the performance (Test Item 2- words in Isolation) of Category B (MA) respondents. With a p – value of 0.000 obtained, it be concluded that at a = 0.05 level of significance, there is a significant (p<0.5) difference between the result of the observed number of stressed syllables and the control's number of stressed syllables. This category recorded second position in the deviation from the control's (12. 00 + 1.62) See table, having additional stressed syllables (a total of number of 240 syllables) compared to that of the control which was 200 stressed syllables.

Table 5: Summary of Deviations in the Performance of Category C (Ph.D) Respondents: (Test Item 2- words in Isolation).

Subjects	Observed No. of stressed syllables (0)	Expected No. of stressed syllables (E)	Difference (O-E)	Percentage Deviation (%)	Rank of Differences
R 1	11	10	3	30	2.5
R 2	13	10	1	10	2.5
R 3	11	10	4	40	13.5
R 4	14	10	2	20	7.5
R 5	10	10	0	0	-
R 6	11	10	1	10	2.5
R 7	11	10	1	10	2.5
R 8	10	10	0	0	-
R 9	10	10	0	0	-
R 10	13	10	3	30	11
R11	12	10	2	20	7
R12	15	10	5	50	15.5
R13	12	10	2	20	7
R14	13	10	3	30	11
R15	12	10	2	20	7
R16	12	10	2	20	7
R17	10	10	0	0	-
R18	14	10	4	40	13.5
R19	11	10	1	10	2.5
R20	15	10	5	50	15.5
RA(Control)	10	10	0	0	-
Total	**241**	**200**	**41**	**410**	**136**

Table 5b: Wilcoxon Matched Pairs Signed Ranks Test

	N	Mean Rank	Sum of Ranks	Asymp. Sig. C2 – tailed P = value
Observed No. Stressed Syllables (0) Negative Rank	0	0.00	0.00	0.000*
Expected No. of Stressed Syllables (E) Positive Ranks	16	8.50	136	P<0.05
Ties	4	-	-	-
Total	20	-		

5.5 Explanation of Results

The result presented in Table 5 reveals that twenty percent (20%) was the modal deviation with a total of six (6) respondents in category C having this level (20%) of deviation from the control's stressed syllables in the performance. R12 and R20 had the highest (50%) deviation followed by R3 and R18 with (40%) deviations. Four respondents: R5, R8, R9, and R17 showed no deviation from the control's stressed syllables in the performance. Table 5a presents the result of Wilcoxon Matched Pairs Signed Rank Test of significance for the deviation in performance (Test Item 2- words in isolation) of category C (PhD) respondents. With a p-value of 0.001 obtained, it can be concluded that at a = 0.05 level of significance, there was a significant ($p<0.05$) difference between the performance of the experimental group and that of the control. Sixteen (16) respondents out of twenty (20) had more stressed syllables than the control which supports the claim that Educated Nigerian English (ENE) feature more stressed syllables than Standard British English (SBE) as in the performance of the control although this group had the least deviation (12.05+1.61)

The respondents had 40 additional stressed syllables (a total number of 240 syllables) compared with the control's performance which had 200 stressed syllables. Comparing the results with the control's result, category C had the least deviation, followed by category B and the highest deviation made was by category A. All the respondents in the categories A, B and C pronounced the ten words in citation form (Test Item 2).

Table 6: Statistical Significance of Deviations in the Performances (Test Items 2-words in Isolation of the three Different Categories of Respondents from the Control's.

Categories	Deviation (O-E)
RA (Control)	10.00
A (BA respondents)	11.95 ± 1.54
B (M A respondents)	12.00 ± 1.62
C (Ph.D respondents)	12.05 ± 1.61

Values are expressed as Mean + S.D, N = 20, except for the control where n = 1
*p< 0.05 relative to control.

5.3.1 Explanation of Results

5.3.2 Statistical Significance of Deviation

Table 5 shows that the performance of all the categories studied were significantly (p<0.05) different from that of the control. There was no significant (p<0.05) difference in performance among the three categories studied. In category A, R1 and R3 had the highest number of deviation of (30) and (40%) respectively; category B, R10 and R14 had (30%) while R12 had (50%) and in category C, R18 and R20 had (40%) and (50%) respectively. This also shows that some Ph.D respondents had more stressed syllable than some BA and MA respondents.

The percentage deviation of each category from the control was calculated. We observed that from the analysis that some respondents from category A stressed appropriately more than some respondents in categories B and C. Respondents in category C also stressed more appropriately more than those in category B. The Educated Nigerian English speakers (ENE) had a predilection for more stressed syllables than the control, making almost every syllable in the words prominent. The sum of the ranks in categories A, B, C was positive in each case (no negative values). This means that other representatives in the categories had more stressed syllables than they were expected to have when compared to the control. Another implication is that there was no significant difference among the three categories, but as an entity, (the educated class), the accent is significantly different from the standard British Accent of English (SBAE).

5.4 Acoustic Analysis: Presentation of Data Stress and Duration

5.4.1 Stress and Duration of Acoustic Data

A computer software called Praat Version 5.3 (2001) was used in our analysis and we were able to get from the control and the three representatives of categories A,B,C, the pictorial representation (waveform) of the utterances. "I reminded them of charismas party" and "Do you understand anything on a Saturday? showing the word duration, utterance duration, overall tempo, and amplitude (intensity) of the stressed and unstressed syllables.

Generally, in the duration of utterances and words analyzed, we observed that out of the twelve (12) syllables in utterance one (U1): Do you understand anything on Saturday? The syllables in "stand" and "Saturday" had the highest mean duration of (0.41secs) each, followed by "Christ in" Christmas (0.43secs). Other syllables are shown on Table 6b. The lowest mean duration was recorded for the syllable [du:], 0.10secs, followed by [dei] was 30secs. Differences in duration were also recorded in the two utterances and the two words we selected. Details of the performances of representative respondents of the three categories (ABC – experimental group) and the control are in Tables 6a-9. Results of the acoustic analyses of utterance 1 (U1): Utterance 2 (U2), word 1 (W1) and word 2 (W2) for duration and amplitude.

Duration in the Educated Nigerian Accents of English (ENAE).

Table 6a: Word Duration Word One

Respondents	Category	Word	Duration in Seconds
Control W1	Control		0.60
R1 – BA W1	A (BA)		0.54
R10 – MA W1	B (MA)	Reminded	0.53
R20 – PhD W1	C (PhD)		0.51
Mean Duration			0.55

Table 6b: Syllable Duration

Respondents												
Control U1	0.18	0.30	0.30	0.43	0.31	0.24	0.23	0.54	0.43	0.54	0.43	0.35
BA U1	0.21	0.22	0.42	0.22	0.98	0.26	0.35	0.74	0.17	0.40	0.31	0.27
MA U1	0.09	0.28	0.43	0.18	0.21	0.28	0.89	0.54	0.54	0.40	0.27	0.25
Ph.D U1	0.12	0.23	0.35	0.49	0.23	0.22	0.17	0.43	0.43	0.56	0.43	0.42
Mean Duration	0.15	0.29	0.38	0.33	0.43	0.25	0.41	0.43	0.42	0.44	0.36	0.32
	do	you	un	der	Stand	any	thing	on	a	sat	ur	Day

Table 6c U1: Utterance Duration

Respondents	UI duration
Control (RA)	2.43
BA - (RI)	2.41
MA - (R10)	2.17
PhD - (R20)	2.50
Mean duration	2. 37
	Secs

Table 7a: Word Duration (W2)
Utterance 2 (U2 – Test Item 3): Christmas (Word 2)

Respondents	Category	Word	Duration in Seconds
Control W2-(RA)	Control		0.62
BA W2-(R1)	A (BA)	Christmas	0.45
MA W2-(R10)	B (MA)		0.48
Ph.D. W2-(R20)	C (PhD)		0.75
Mean duration			0.58

Table 7b U2: Syllable Duration

Respondents										
Control U2 (RA)	0.03	0.28	0.27	0.16	0.33	0.18	0.55	0.50		
B A U2 - (R1)	0.08	0.14	0.60	0.59	0.29	0.16	0.19	0.27		
MA U2 - (R10)	0.14	0.19	0.25	0.61	0.24	0.17	0.18	0.32		
PhD U2 - (R20)	0.16	0.16	0.16	0.19	0.28	0.31	0.21	0.55		
Mean Duration in sec	0.10	0.19	0.32	0.38	0.28	0.20	0.28	0.41		

Table 7c U2: Utterance Duration

Respondent	U2 duration
Control (RA)	1.8
BA (R1)	1.53
MA (R10)	1.88
PhD (R20)	2.01
Mean duration	1.82
	Secs

Table 8: Amplitude (Intensity) in the Educated Nigerian Accent of English (ENAE)

Respondents	U1	U2	W1	W2
Control (RA)	7.48	520	64	57
BA (R1)	7.61	502	57	54
MA (R10)	847	585	69	66
Ph D (R20)	8.53	570	69	63
Mean duration in dB for the experimental group	8.20 dB	552 dB	65 dB	61 dB

Table 9: Overall Tempo in the Educated Nigerian Accent of English (ENAE).

Respondents	U1	U2	W1	W2
Control (RA)	2.41	1.85	0.58	0.60
BA (R1)	2.44	1.83	0.52	0.43
MA (R10)	2.19	1.68	0.51	0.46
PhD (R20)	2.48	2.01	0.49	0.73
Mean Duration for the experimental group	2.36 BPM	1.74 BPM	0.51 BPM	0.54 BPM

There were differences in the overall speed tempo.
Key: BPM = Beat Per Minute

6.0 Discussion of Findings

6.1 Stress and Duration

We noticed that in both the words and utterances, our respondents had more stressed syllables than the control. For instance, our control had (3) stressed syllables in utterance 1 (U1). The metrical representation of the utterance (U1) in Tables 9a - 9d shows that the three representatives of the categories (ABC), had in the following order BA (category A) representative: eight (8) stressed syllables; MA: five (5) stressed syllables and Ph D: six (6) stressed syllables. These clearly indicate that all the respondents had more stressed syllables than the control.

In the Utterance2 (U2), a similar result was obtained: the BA respondents had (5) "prominent" stressed syllables with three (3) extra prominent syllables compared to that of the control that had two (2). The experimental group had mean duration of 0.51secs and 0.54secs respectively for the two selected words, W1 and W2. These values were less than those of the control who had 0.58 sects in (W1) and (W2) respectively. In some cases, the experimental group used longer time in pronouncing the stressed syllables while the control used shorter time in pronouncing the stressed syllables while the control used shorter time in pronouncing the stressed syllables. (see values for the syllable duration in Tables 5b and 6b).

It was also observed that there were some variations in the performances of the respondents in each category. For instance, BA representatives used in U1, 0.21secs, MA 0.17secs and PhD, 0.48secs. Control's duration had little or no effect on stress or that syllables could be stressed or unstressed irrespective of time. But our respondent's duration played little or no role in producing stressed syllables rather tone indicates prominent syllables with or without duration. It therefore, means that ENE speakers do not necessarily used duration and pitch to mark stress but tone. Whereas, duration of time could only be a cue to prominent syllables but it was actually tone that signaled the prominent syllables. Long and short vowels also played a major role in determining the duration of each syllable to a large extent which is contrary to some linguists' postulation that duration might be the most important cue to stress Cutler and Darwin (1981), Penge and Jean (2001).

Again syllables that were not stressed in the control's performance were stressed by our respondents (ENG speakers) resulting in superfluity of prominent syllables. We observed that there was no significant difference among the three representatives of the three categories but there was a significant difference between their performance as a whole and that of control. We also noticed that the control used longer time in pronouncing W1 (reminded – 0.60secs) and W2 (Christmas – 0.62secs) respectively. The control also observed pauses and was relaxed when pronouncing these words while our respondents were not. The reason could be traced to as it was, earlier noted, that in utterance durations, there were some inconsistencies in U1, in the sense that duration of some of our respondents were longer. On the whole, the mean duration was less than that of the control who took more time in pronouncing the utterance (U1) than the experimental group. In U2, the controls duration was longer than those of BA and MA representatives except the Ph.D representative who had 2.04 secs against the controls which was 1.88secs. The BA representative had 1.56secs. The mean duration 1.77secs was also shorter than that of the control (1.88secs). On the average, in word and utterance durations, the control invariably used longer duration than the experimental group except in the word "Christmas". This is a clear indication that in the ENAE, word and utterance duration are relatively shorter than what we observed in the native speaker's variety of English represented by the control.

As we observed, the stress pattern of the ENAE was not generally the same as against some claims that the stress pattern of individual words in the speech of Nigerians who speak the standard form of Nigerian English is generally the same as RP Ufomata, (1990:215.); Udofot, (1997:98).

6.2 Overall Tempo in the Educated Nigerian Accent of English (ENAE).

Table 8 presents details of the overall tempo or duration of the experimental group and the control utterances 1(U1) and utterances 2 (W2), Word 1(W1) and Word 2(W2). As observed, the control took longer time in pronouncing both the words and utterances, which is a clear indication that the overall tempo (speed) is slower in the two utterances and two words than that of the experimental group. Also, in the syllable duration the control took longer time to pronounce the syllables. Some forms of inconsistencies were noticed in both the control's and experimental groups use of longer time to pronounce the unstressed syllables. The overall tempo for both groups may be described as "erratic" or "unpredictable", pauses within and between the utterances as intervening variable was responsible for the long duration of words and utterances and slow tempo in the control's performance in this study. The experimental group did not pay attention to pauses in their utterances which rhythmic nature of the control's output. The control seemed related but rhythmic in his rendition but the rhythm of the experimental sounded more or less like what Udofot (1997:108) describes as isochronous.

6.3 Amplitude (intensity)

According to Ladefoged (1996:16), "the extent of the maximum variation in air pressure from normal during a sound is called the amplitude of that sound". Human voice is a mixture of many hundreds of frequencies, some

of which will be at higher amplitude (strengths) than others. Clark and Yallop (2006:208) view amplitude as a perceived loudness cause by the intensity or vocal changes of the speaker. The implication is that the greater the intensity of the vocal folds vibration (pitch), the louder we perceive a speech sound to be. Generally, the larger the amplitude, the greater the intensity, the louder. Greater intensity results in loudness and loudness means prominence. This clearly indicates that amplitude is a correlate of stress. This paper considers amplitude in terms of intensity.

Table 7 presents data showing the amplitude (intensity) of the utterances 1 (U1) and 2 (U2), W1 and W2m as pronounced by the control and the three representatives of the three (3) categories: A, B, C.

From the table, we observe, that the three representatives had higher amplitudes (intensity) than the control, except the BA representative who had less amplitude in U2 W1 and W2. The rest of the values were greater than those of the control. This louder amplitude for the experimental group means greater intensity and loudness. The greater intensity (amplitude) values for the experimental group could be observed in pitch, and the tendency of our respondents to increase their pitch successfully in a stretch of utterance.

6.4 Typical Stress Pattern

In this section, a metrical representation of the patterns of the three representatives of the three categories (A,B,C) and the control since tress and rhythm are interested in a way according to (Koenraad and Scott: 102) that "alternations between stressed and unstressed syllables" provide connected speech with its rhythm. The patterns are compared with those of the control. The two utterances and the two words are used for the comparisons. We consider rhythm from the point of view of the alternations of strong (S) and weak (W) syllables using the modified version of Liberman and Prince (1977) Metrical Theory. In our analysis, the metrical notations "S" for strong syllables or stressed syllables and "W" for weak syllables or unstressed syllables are used in our analysis. Tone (High (H) and Low (L) was used to mark rhythm.

Table 9a: Typical stress patterns (U1)

U1	Do	you	un	der	stand	any	thing	on	a	Sa	tur	day
Ctrl (R1)	W	W	S	W	W	S	W	W	W	S	W	W
BA (R1)	S	S	W	S	W	S	S	S	W	S	W	S
MA(R10)	W	W	S	W	S	S	S	S	W	W	W	W
Ph.D (R20)	W	S	W	W	S	S	S	W	W	S	W	S

Total number of syllables = 12
Total number of expected stressed syllables = 3

Table 9b: Typical Stress Patterns (W1)

W1		un	der	stand
Control	(RA)	S	W	W
BA	(R1)	W	S	W
MA	(R10)	S	W	S
PhD	(R20)	W	W	S

Total number of syllables = 3
Total number of expected stressed syllable = 1

Table 9C: Typical Stress Patterns (U2)

	U2	I	re	min	ded	them	on	Christ	mas
Control	(RA)	W	W	S	W	W	W	W	S
BA	(R1)	S	W	S	S	W	W	S	S
MA	(R4)	W	W	S	S	W	W	S	W
Ph.D	(R8)	S	W	S	S	W	S	W	S

Total number of syllable = 8
Total number of expected stressed syllable = 2

Table 9d: Typical Stress Pattern (W2)

U2		chris	mass
Control	(RA)	W	S
BA	(R1)	S	S
MA	(R4)	S	W

Total number of syllables = 2
Total number of expected stressed syllable 1

6.5 General Discussion

The preponderance of prominent syllables in the educated Nigerian accent of English (ENAE) in Table 9c violates the Metrical Theory which is used as our descriptive model. This shows that the ENAE rhythm is different from that of controls'. The use of 'S' and 'W' is an application of Metrical Theory which shows the ENAE's rhythm different pattern from the native speaker's variety (the control).

In this study, the duration of syllables was observed to ascertain the stressed and unstressed syllables and how they correlated with High (H) and low (L) tones. It was discovered that strong syllables did not necessarily correlate with high tones and weak syllables did not consistently correspond with low tones in the respondents' performances. In the Ph.D representative's U2, for instance the syllables "ed' in the word "reminded", the unstressed syllable "ed" had longer duration (0.18secs), louder amplitude (71dB) and higher pitch (236Hz). The MA representative had also the same unstressed syllable "ed" in the same word "reminded" 0.60secs for duration, higher pitch (71Hz) and larger amplitude (intensity) (158dB). The values were as high as the syllable "mind" which is a stressed syllable in that utterance. The MA representative stressed both syllables "mind" and "ed" thereby having two consecutive "Ss" and the superfluity of prominent syllables in the performances of the experimental group. The same was observed in the performance of BA representative as the syllable "mind" and "ed" were also stressed. From the analysis, the three representatives had contiguous "S"s in the same word "reminded" which violates the principle of Rhythmic Alternation. Consequently, the ENAE rhythmic pattern is quite different from that of the native speaker (control). From these findings, we suggest that strong syllables (stressed) do not necessarily correlate with high tones and weak (unstressed) syllables do not always correlate with low tones as our data show.

This is so because the English speakers did not use stress to mark prominence; they used tone than stress and tone is explained in terms of the larger amplitudes of the words used as examples. Consequently, the native speakers perceive the L2 speakers' (Nigerian English speakers) utterances and words as having more prominent or stressed syllables (see the text grids and sounds for durations, pitch and amplitude) intensity. Again, the three representatives used tone to mark stress on the word "anything". The stressed syllable "any" was actually stressed and the unstressed syllable "thing: was also stressed. The entire representative pronounced this word with high tones whereas the control did not stress the syllable "thing" but all the weak syllables of our subjects correlated with low toes. In utterance (U1), the word "reminded" the control pronounced the unstressed syllable "re" with a high tone whereas the stressed syllable "mind" was pronounced with a low tone. Longer durations for stressed syllables do not mean higher pitch or larger amplitude. Stressed (strong) syllable in other words does not mean higher pitch or larger amplitude (intensity). Sometimes unstressed (weak) syllables have longer duration, higher pitch and larger amplitude in the Standard British Accent (SBA), (Control) and the Educated Nigerian Accent of English (ENAE), (experimental group). Also, at other times longer durations of syllables, words or utterances may mean higher pitch and larger amplitude but not consistently as revealed in our study. High tone is not always accompanied by extra duration. It is merely marked by pitch change as noted in our respondents' output.

The ENE speakers sometimes place stress on the wrong syllables because they use tone on each syllable or word in their tone languages and this appears in the ears of the native speaker to be wrongly stressed. From our observation, tone characterizes the ENAE'S rhythmic pattern whereas stress characterizes that of the native speaker (control). The contiguous "Ss" by our respondents was due to the fact that they tended to increase the pitch at word boundaries thereby stressing the wrong syllables in words. According to Ladefoged (2006),s the relationship between stress and pitch is that stressed sounds will usually have a higher pitch, but as we observed this was not the case. Rather, we have high tone, high pitch and large amplitude (intensity). These variations in the use of stress by our respondents brought about a shaky or unstable rhythmic pattern that is significantly different from that of the control. It is also shown in our data that the Educated Nigerian Accent English (ENAE) varies from the British Accent (BA) and other Englishes of the world in the area of having more prominent (stressed) syllables. For instance, the BA representative had eight (8), MA had five (5), Ph.D had six (6) whereas the control had only (2) in utterance 1 (U1).

Similarly, we also noticed that in utterance 2 (U2). BA had five (5) prominent syllables; MA had three (3) and Ph.D had five (5), whereas the control had (two). The control, on the other hand, had more reduced or weak (W) syllables than the three representatives. On the average in U1 and U2 the three representatives had extra ten (10) and seven (7) respectively. We also observed the presence of contiguous strong syllables in all the productions of the three representatives (i.e.) having a sequence of (S) (SS) in word. In both utterances U1 and U2 there were no contiguous "S" in the SBAE as seen in the control's output thus: W W S W W S W W W S W W, which obeys the principle of Rhythmic Alternations. In the performances of the three representatives, there were the presence of contiguous "S" and contiguous "W" (W W S W S S S S W W W), having a sequence of two initial weak syllables in the same word.

7.0 Summary and Conclusion

In our analyses (perceptual, statistical, acoustic and metrical, the typical stress and rhythmic patterns of the three representatives of the three categories (ABC) and the control in the two selected utterances U1 and U2 and words; W1 and W2 were examined. We observed that there was corroboration by the four approaches used. For instance, Nigerian English speakers stress more syllables than the native speaker, indicated by the control. Hence, the stress and the rhythmic patterns in the Educated Nigerian Accent of English (ENAE) show among others:

- The rhythmic pattern of the control maintained the initial constraint rule of Metrical Theory (S W S W sequence); whereas the respondents violated it by having S S S W or W W W sequence in a word;
- The Educated Nigerian English Speakers have a tendency to stress more syllables than the native speaker (control).
- The stress pattern of the Educated Nigerian speakers differ significantly from that of the native speaker (control).
- The Educated Nigerian English (ENE) speakers spend more time in pronouncing the stressed syllables in most cases than the unstressed syllables;
- The three representatives of the three categories have a similar tendency to stress many prominent syllables as attested to in the words and utterances analyzed, which is different from that of the native speaker.

REFERENCES

Abercrombie, D. (1967). Elements of General Phonetics. Edinburgh: Edinburgh University Press.
Adtugbo (1979). Nigerian English: Facts or Fiction? Lagos Notes and Records 6.
Akere, F. (1982). "Sociocultural Constraints and the emergence of a standard Nigerian English" In. J. B. Pride (ed) New Englishes pp. 85-89.
Eka, D. (1993). Timing in Educated Spoken Nigerian English. Journal of Humanities. Vol. 3, 1-11.
Eka, D. (1996). Phonological Foundations: Uyo: Scholars Press (Nig.) Ltd.
Gimson, C. (1980). An Introduction to the Pronunciation of English. London: Edward Arnold (Publishers) Ltd.
Jones, D. (2006). English Pronouncing Dictionary Singapore: Cambridge University Press. P. 433
Koenraad. L. and Allan, W. S. (n.d) An Introduction to English Language, Sound, word and Sentence.